

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Excel Industries Inc

Mid-America Manufacturing Technology Center

Mower Company Sharpens Its Competitive Edge

Client Profile:

Excel Industries Inc. manufactures Hustler Turf equipment, zero-turning radius mowers for commercial, residential and industrial use. Excel has been exporting its products since 1974 and has established successful business relationships in over 28 countries throughout the world. Excel has been active in global sourcing of components, and currently source (either directly or through an intermediary) from China, India, Mexico, Canada, and Japan. Excel was founded in 1960 and employs 300 people in Hesston, Kansas.

Situation:

Excel Industries prides itself on its products durability and provides a substantial warranty on all of its machines. Excel Industries recently designed a hydraulic power drive mower using a new frame design. Excel contacted the Mid-America Manufacturing Technology Center (MAMTC), a NIST MEP network affiliate, to test the new frame's stress levels during normal mowing activity.

Solution:

MAMTC connected strain gauges to test the frame and collected performance data while the mower was put through its paces. MAMTC completed a complete analysis of the data to determine if the design criteria for product safety and durability had been met with the new frame structure. Some maneuvers during the testing indicated excessive stress levels that could lower the life expectancies for the frame members. As a result of MAMTC's analysis, Excel designers decided to make some modifications to the frame section of the mower. The section of the tubing used in the frame structure was increased to handle the stresses identified during testing. With the new mower modified, Excel and MAMTC are working together to retest the machine to ensure that the new design meets and exceeds the customer expectations for quality and reliability.

Results:

- * Realized savings of \$10,000 to \$20,000 in potential warranty costs.
- * Reduced defect rates and production costs.
- * Improved product design and durability.

Testimonial:

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